

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
18 August 2005 (18.08.2005)

PCT

(10) International Publication Number
WO 2005/075386 A3

(51) International Patent Classification⁷: **C10G 2/00**,
C07C 41/01, 41/09, 1/20

(21) International Application Number:
PCT/IB2005/050449

(22) International Filing Date: 3 February 2005 (03.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/542,088 5 February 2004 (05.02.2004) US

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(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,
ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:
27 October 2005

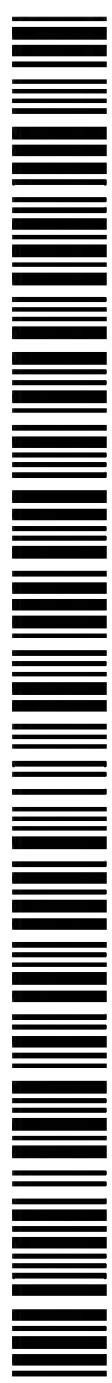
For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: CO-PRODUCTION OF HYDROCARBONS AND DIMETHYL ETHER

$$\text{SN} = \frac{[\text{H}_2] - [\text{CO}_2]}{[\text{CO}] + [\text{CO}_2]} \quad (\text{I})$$

and carbon monoxide and also carbon dioxide. The composition of at least a portion of the tail gas is adjusted to provide a DME synthesis feedstock with a syngas number (SN) between 1.8 and 2.2, where formula (I) and where [H₂], [CO] and [CO₂] respectively are the molar proportions of hydrogen, carbon monoxide and carbon dioxide in the DME synthesis feedstock. The DME synthesis feedstock is fed into a DME synthesis stage for conversion.

(57) Abstract: A process for co-producing hydrocarbons and dimethyl ether (DME) includes feeding a gaseous feedstock comprising hydrogen and carbon monoxide, into a threephase low temperature catalytic Fischer-Tropsch reaction stage, allowing the hydrogen and carbon monoxide partially to react catalytically in the Fischer-Tropsch reaction stage to form hydrocarbons, and obtaining a tail gas from the Fischer-Tropsch reaction stage which includes unreacted hydrogen



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